Assignment 2

Due on 2020-06-12, 23:59 IST

Problem 1: For a four variable fuzzy set A defined by the membership function μ_A(x) = (x^2 + 1) / (x^2 + 2) for x ∈ [0, 1]. Find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 2: For a triangular membership function defined by μ_A(x) = max(0, min(x, 1 - x), 1), find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 3: For a trapezoidal membership function defined by μ_A(x) = max(0, min(x, 1 - x), 0.5), find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 4: For a Gaussian membership function defined by μ_A(x) = exp(-x^2 / 2), find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 5: For a sigmoidal membership function defined by μ_A(x) = 1 / (1 + exp(-x)), find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 6: For a general membership function defined by μ_A(x) = a + bx + cx^2, find the value of μ_A(x) for x = 0, 0.5, 1, where a = 1, b = -2, c = 1.

Problem 7: For a possibilistic membership function defined by μ_A(x) = 1 - (1 - μ_A(x))^2, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 8: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^2}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 9: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = 1 - |x - 0.5|}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 10: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = sin(x)}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 11: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = e^(-x)}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 12: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^3}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 13: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = 1 - x^2}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 14: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 15: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = 1 - x}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 16: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = 1 - e^(-x)}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 17: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^2 - 1}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 18: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^3 - x}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 19: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = 1 - x^2}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 20: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^3 - x^2}, find the value of μ_A(x) for x = 0, 0.5, 1.

Problem 21: For a fuzzy set A defined by A = {x ∈ [0, 1] | μ_A(x) = x^3 - x}, find the value of μ_A(x) for x = 0, 0.5, 1.